II. CLAIMS

1. (Previously Presented) A method comprising:

defining a set of encryption keys comprising at least two encryption keys,

selecting at each of first and second access points from said set of encryption keys one encryption key at a time for encrypting information to be transmitted between said first and second access points and a mobile terminal,

transmitting from the second access point, at intervals, data about the encryption key selected at the time over a broadcast control channel to the mobile terminal,

setting up a data transmission connection between said mobile terminal and the first access point for the transmission of information, and

performing a handover, to set up a data transmission connection between the second access point and the mobile terminal,

wherein in connection with the handover, said data is transmitted over said broadcast control channel to the mobile terminal about the encryption key selected at the second access point, and

for the transmission of said data about the encryption key such a broadcast control channel control field is selected which is not used as a general broadcast control channel control field intended for several mobile terminals.

2. (Previously Presented) The method according to claim 1, wherein each encryption key in said set of encryption keys is allocated an encryption number, and said encryption number is used as said data about the encryption key selected.

3. (Previously Presented) The method according to claim 1, in which information is transmitted in data frames, wherein the encryption key is changed in connection with each data frame.

4. (Previously Presented) The method according to claim 3, in which some of the data frames are used as common data frames for transmitting information from the second access point to more than one mobile terminal, wherein said data about the encryption key is transmitted in another data frame than said common data frame.

5. (Previously Presented) The method according to claim 1, wherein said set of encryption keys is stored in said access points and in the mobile terminal.

6. (Previously Presented) The method according to claim 1, wherein the mobile terminal informs said second access point about a need for handover, and said second access point transmits information about the encryption key selected at the second access point at the moment to the mobile terminal .

7. (Previously Presented) The method according to claim 1, wherein the mobile terminal informs said first access point about a need for handover, said first access point transmits information about the handover to said second access point, and said second access point transmits said data about the encryption key selected at the second access point at the time to the mobile terminal.

8. (Previously Presented) The method according to claim 1, wherein the first access point executes a forced handover, in which the mobile terminal communicating with said first access point is transferred to communicate with said second access point, said first access point transmits information about the handover to said second access point, and said second access point transmits said data about the encryption key selected at the second access point at the time to the mobile terminal.

9. (Previously Presented) A mobile communication system comprising:

at least one mobile terminal,

at least a first access point and a second access point;

a set of encryption keys being defined in the communication system;

each of the access points comprising a circuit for selecting from said set of encryption keys one encryption key at a time to be used for encryption of information to be transmitted between each of said access points and said mobile terminal, and

a circuit for transmitting data about the encryption key selected at the time at intervals from the second access point over a broadcast control channel to the mobile terminal;

the communication system also comprising:

a circuit for setting up a data transmission connection between the mobile terminal and the first access point for the transmission of information, and

a circuit for executing a handover and setting up a data transmission connection between the second access point and the mobile terminal,

wherein the mobile communication system also comprises a circuit for transmitting over said broadcast control channel said data about the encryption key selected at the second access point to the mobile terminal in connection with the handover, and

said circuit for transmitting is configured to select for the transmission of said data about the encryption key such a broadcast control channel control field which is not used as a general broadcast control channel control field intended for several mobile terminals.

10. (Previously Presented) The mobile communication system according to claim 9, wherein it also comprises a circuit for defining an encryption number for each encryption key in said set of encryption keys,

wherein said encryption number is arranged to be used as said data about the encryption key selected.

11. (Previously Presented) The mobile communication system according to claim 9, which comprises a circuit for transmitting information in data frames, wherein the encryption key is arranged to be changed in connection with each data frame.

12. (Previously Presented) The mobile communication system according to claim 11, in which some of the data frames are arranged to be used as common data frames for transmitting information from one access point to more than one mobile terminal,

wherein said data about the encryption key is arranged to be transmitted in another data frame than said common data frame.

13. (Previously Presented) The mobile communication system according to claim 9, wherein said set of encryption keys is stored at said access points and said mobile terminal.

14. (Previously Presented) The mobile communication system according to claim 9, wherein the mobile terminal comprises a circuit for informing said second access point about the need for a handover, and said data is arranged to be transmitted from said second access point to the mobile terminal about the encryption key selected at the second access point at the time.

15. (Previously Presented) The mobile communication system according to claim 9, wherein the mobile terminal comprises a circuit for informing said first access point about the need for handover.

16. (Previously Presented) The mobile communication system according to claim 9, wherein:

the first access point comprises a circuit for performing a forced handover, the mobile terminal communicating with said first access point is arranged to be handed over to communicate with said second access point, and

a circuit for transmitting information about the handover to said second access point, wherein said data about the encryption key selected at the second access point at the time is arranged to be transmitted from said second access point to the mobile terminal.

17. (Previously Presented) The method according to claim 1, wherein said encryption keys are frame specific and are generated at both ends of said transmission connection.

18. (Previously Presented) The mobile communication system according to claim 9, wherein said encryption keys are frame specific and are generated at both ends of said transmission connection.

19. (Previously Presented) A network element comprising:

a circuit for selecting from a set of encryption keys one encryption key at a time to be used for encryption of information to be transmitted over a broadcast control channel between said network element and a mobile terminal, and

a circuit for transmitting data about the encryption key selected at the time at intervals from the network element;

wherein said circuit for transmitting is configured to transmit over said broadcast control channel said data about the selected encryption key to the mobile terminal in connection with a handover, and

said circuit for transmitting is configured to select for the transmission of said data about the encryption key such a broadcast control channel control field which is not used as a general broadcast control channel control field intended for several mobile terminals.

20. (Previously Presented) A network element according to claim 19 wherein it is an access point of a communication network.

21. (Previously Presented) A network element comprising:

a selector for selecting from a set of encryption keys one encryption key at a time to be used for encryption of information to be transmitted over a broadcast control channel between an access point and a mobile terminal, and

a transmitter for transmitting data about the encryption key selected at the time at intervals from the access point;

wherein said transmitter is configured to:

transmit over a broadcast control channel said data about the selected encryption key to the mobile terminal in connection with a handover, and

select for the transmission of said data about the encryption key such a broadcast control channel control field which is not used as a general broadcast control channel control field intended for several mobile terminals.